

REMARKS

By this amendment, Figure 1 and paragraphs [0033] and [0034] of the specification have been amended. Claims 15-18 were previously withdrawn. No new matter has been added.

Claims 1-23 remain pending in the application. Reconsideration and allowance of all of the claims is respectfully requested in view of the following remarks.

In regard to Objection to the Drawings

The Examiner has objected to the drawings under 37 CFR 1.83(a) on the basis that they do not show the bearing claimed in claims 12 and 14.

In response to the Examiner's remarks, the drawings have been amended.

The bearing which was shown but previously unidentified in the drawings is now identified by reference number 25 in Figure 1. Paragraph [0034] of the specification has been amended in consequence.

The Applicant submits that no new matter has been added by this amendment, as it consists merely of adding a reference number to a feature previously present in both the description and the drawings.

As a result of the present amendment, the Examiner's objection to the drawings is believed to be overcome and should be withdrawn.

In regard to Objection to the Specification

The Examiner has objected to the specification under 37 CFR 1.75(d)(1) and MPEP § 608.01(o) as failing to provide proper antecedent basis for the "third gear" recited in the claims.

The Examiner's attention is directed to paragraph [0032] of the specification as originally filed:

The starter assembly 1 includes a starter motor 2 that engages with a starter ring gear 4 through starter gearing 3. The starter

ring gear 4 is connected rigidly to a disk that is part of a crankshaft, which is not illustrated.

The Applicant submits that the description of the starter ring gear 4 provides “clear support or antecedent basis” for the third gear recited in the claims, as required by 37 CFR 1.75(d)(1) and MPEP § 608.01(o).

Referring to paragraph [0034] of the specification, a first gear wheel 11 is described. Referring to paragraph [0035], a second gear wheel 13 is described. The interaction between the first gear wheel 11, the second gear wheel 13 and the starter ring gear 4 is described in paragraph [0039].

The starter ring gear 4 is described in paragraph [0032] as being “connected rigidly to a disk that is part of a crankshaft”, whereas the third gear is described in claim 1 as “being operatively connected to the crankshaft”. In addition, paragraph [0039] describes “the engaged position, [wherein] the second gear wheel 13 meshes with the starter ring gear 4, so that a drive connection is established between the starter motor 2 and the crankshaft”, whereas claim 1 recites “the second gear transmitting rotational motion between the intermediate shaft and the third gear; and a clutch [...] permitting selective decoupling of the second gear from the third gear.” As such, a person skilled in the art would realize that the starter ring gear 4 is an embodiment of the third gear recited in the claims, and the description of the starter ring gear provides clear support for the third gear recited in the claims, as required by 37 CFR 1.75(d)(1) and MPEP § 608.01(o).

Therefore, the Examiner’s objection to the specification is believed to be improper and should be withdrawn.

In regard to Rejection of Claims 5-10, 13 and 14 Under 35 U.S.C. § 112, second paragraph

The Examiner has rejected claims 5-10, 13 and 14 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In particular, the Examiner states that

[i]t is unclear how applicant regards claim 5 as readable on the elected embodiment. Claim 5 recites “[A]t least one driving disk connected positively to the intermediate shaft,” which is recited explicitly in the non-elected embodiment of

specification paragraph 0043. Under applicant's definition of a "positive connection" on page 10 as a rigid connection made by fastening two elements together, it is not clear how applicant regards claim 5 as readable on the elected embodiment which requires the driving disk to be positively connected to the hub. While the hub is disposed on the intermediate shaft, applicants definition of "positive connection" does not permit another element to be disposed between the two elements that are positively connected.

The Applicant submits that the Examiner has failed to appreciate the distinction made in the description between a positive connection and a direct connection. These two concepts are not coextensive, and two elements may be directly connected without being positively connected, or vice versa, as these terms are used in the present application.

Referring to paragraph [0046] of the present application, the Applicants' definition of a positive connection "encompass[es] a rigid connection, which may be made by fastening two elements together [...]". This definition is inclusive and not exhaustive. It requires only that the connection be rigid, and does not specify the manner by which the rigid connection is made. Even assuming, without admitting, that the definition were exhaustive, it would still not exclude the possibility that the rigid connection may be made by a third element disposed between the two positively connected elements. Therefore, a positive connection between two elements as defined in the specification does not require that the two elements be fastened directly to one another, contrary to the Examiner's assertion.

Referring now to paragraph [0042] of the description, describing the elected embodiment, "in this embodiment, the driving disk 18 is positively connected to the intermediate shaft 8 via the hub 9." Thus, the elected embodiment is an example of a rigid (positive) but indirect connection between the driving disk 18 and the intermediate shaft 8, provided by the hub 9.

Referring now to claim 5, there is recited "at least one driving disk connected positively to the intermediate shaft...". Because a positive connection between a driving disk and an intermediate shaft is specifically recited in paragraph [0042], corresponding to the elected embodiment, it is submitted that claim 5 reads on the elected embodiment.

Referring now to claim 6, there is recited "a hub disposed between the driving disk and the intermediate shaft, positively connecting the driving disk to the intermediate shaft."

This reads on the elected embodiment described in paragraph [0042], namely the hub 9 providing a positive connection between the driving disk 18 and the intermediate shaft 8.

For these reasons, it is submitted that the Examiner's rejection of claim 5 and 6 is improper, and the Examiner is requested to withdraw his rejection of claim 5 and 6, as well as claims 7-10, 13 and 14 depending therefrom.

In regard to Rejection of Claims 1, 2, 4-14, 19 and 20 Under 35 U.S.C. § 102(b)

The Examiner has rejected claims 1, 2, 4-14, 19 and 20 under 35 U.S.C. § 102(b) as being anticipated by Whitney, U.S. Patent No. 1,883,432. The Applicants disagree.

Claim 1 recites

an intermediate shaft for transmitting rotational motion
between the output shaft and the crankshaft;

Bearing this in mind, the Examiner's attention is directed to the following feature of claim 1:

the friction plate clutch constructed and arranged to operatively
decouple the first gear from the intermediate shaft[...]

The Applicant submits that at least the above feature of claim 1 is not taught by Whitney.

The Examiner has indicated on page 4 of the rejection that he considers the arbor 4 of Whitney to correspond to the intermediate shaft recited in claim 1. The Examiner has misinterpreted the teaching of Whitney.

Referring to lines 77-80 of page 1 of Whitney,

A smooth arbor 4 [is] suitably fixed as by means of a threaded
portion 5 and a nut 6 in said support, and seating at its inner
end in an opening 7 in the frame 1.

Referring also to Figures 1-3 of Whitney, it is apparent that the arbor 4 of Whitney is fixed in position by its threaded end in a threaded portion 5 of the support 2, which is fastened by the nut 6. As such, the arbor 4 is not free to rotate and cannot transmit rotational motion between an output shaft and a crankshaft as recited in claim 1.

Referring now to lines 3-8 of page 2 of Whitney,

[a] gear 29 is mounted on the inner end of power shaft 26, being retained thereon by suitable means such as a stop collar 31, and keyed thereto by means of lugs 32 which extend inwardly through slots 33 in said shaft.

It is apparent that the gear 29 of Whitney, interpreted by the Examiner as the “first gear”, is keyed to the power shaft 26 by lugs 32 extending inwardly through slots 33 in the power shaft 26. As such, the gear 29 of Whitney cannot be operatively decoupled from the power shaft 26 by a clutch.

Referring now to lines 29-36 of page 2 of Whitney,

[a] one-way driving connection between the shaft 26 and pinion 28 is provided in the form of a friction clutch 39 comprising friction discs 41 and 42 splined respectively to the inner end of the pinion 28 and to a nut member 43 mounted on and cooperating with an intermediate threaded portion 44 of said shaft.

It is apparent that the friction clutch 39 of Whitney selectively couples the shaft 26 to the pinion 28. The Examiner has indicated on page 4 of the rejection that the pinion 28 corresponds to the second gear recited in the claims, and not to the first gear. As such, the friction clutch 39 of Whitney does not operatively decouple the gear 29, interpreted by the Examiner as the first gear, from the shaft 26, interpreted by the Examiner as the intermediate shaft. Therefore, Whitney does not teach a friction plate clutch constructed and arranged to operatively decouple the first gear from the intermediate shaft.

Therefore, at least one feature of claim 1 is not taught by Whitney. As such, the Examiner is requested to withdraw his rejection of claim 1 and claims 2, 4-14, 19 and 20 depending therefrom.

In regard to Rejection of Claims 1-3, 5-10 and 11-14 Under 35 U.S.C. § 102(b)

The Examiner has rejected claims 1-3, 5-10 and 11-14 under 35 U.S.C. § 102(b) as being anticipated by Froment, U.S. Patent No. 4,883,152. The Applicants disagree.

The Examiner's attention is directed to the following feature of claim 1:

a clutch associated with the second gear permitting selective decoupling of the second gear from the third gear

The Applicant submits that at least the above feature of claim 1 is not taught by Froment.

Referring to page 6 of the rejection, the Examiner states that Froment teaches

a second gear (1) operatively connected between the intermediate shaft and a third gear associated with the crankshaft, and a clutch associated with the second gear (2). A third gear is inherently present and operatively connected to the crankshaft to transmit power from the second gear to the crankshaft to start the engine.

The Examiner is incorrect in his interpretation of Froment.

The overrunning clutch 2 of Froment is disposed between the teeth 32, identified by the Examiner as the “first gear”, and the drive pinion 1, identified by the Examiner as the “second gear”. In addition, the overrunning clutch 2 of Froment includes the friction ring 6 identified by the Examiner as the “friction plate clutch” that operatively decouples the first gear from the intermediate shaft. As such, the overrunning clutch 2 of Froment cannot permit selective decoupling of a second gear from a third gear as claimed, because it would not be operatively disposed therebetween.

The Examiner states that the third gear is “inherent” in Froment, and not explicitly shown. Because the third gear is not shown in Froment, the manner in which the apparatus shown in Froment would connect to a third gear is not shown. In particular, Froment makes no mention of a clutch that would permit selective decoupling of a second gear from a third gear operatively connected to a crankshaft. Therefore, Froment does not teach a clutch associated with the second gear permitting selective decoupling of the second gear from the third gear.

Therefore, at least one feature of claim 1 is not taught by Froment. As such, the Examiner is requested to withdraw his rejection of claim 1 and claims 2, 3, 5-10 and 11-14 depending therefrom.

In view of the above amendments and remarks, the Applicant respectfully submits that all of the currently pending claims are allowable and that the entire application is in condition for allowance.

Should the Examiner believe that anything further is desirable to place the application in a better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number listed below.

At the time of filing of the present response, no fees were believed to be necessary. In case any fee should be necessary, the Office is hereby authorized to debit Deposit Account number 502977.

Respectfully submitted,

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